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Remarks:

Claims 1 to 11 as amended or newly presented remain in this application, and are presented for reconsideration.

A proposed corrected Fig. 2 is enclosed, incorporating the correction that adds optic axis 60. A minor correction is made to the specification at the paragraph from page 7, line 27 to page 8, line 21.

The Claims have been amended to present a better definition of the invention, and to help emphasize those features and elements present in the Claims that serve to distinguish the invention over the state of the art. The structure recited in the claims finds antecedent basis in the paragraph from page 7, line 27 to page 8, line 21.

Claims 1, 2, and 4 to 9 were rejected under 35 U.S.C. §103(a) as being obvious and unpatentable over Feng in view of Pidhirny. Feng was cited as showing a hand-held data collecting device that uses a black light source, i.e., a strobe or discharge tube. Feng fails to show or suggest a shield for guiding black light emitted by diodes (or other source). Pidhirny is cited for showing a guide 20 or 420 that is configured as a frustum of a cone, and may be made of a plastic material.

Claim 3 was rejected under 35 U.S.C. § 103(a) as being obvious and unpatentable over Feng in combination with Pidhirny, and further in view of Hattersley et al. Hattersley et al. was cited for its passage at page 2, paragraph 0012, that the diffuse illuminator has a light conductor in the form of a transparent prism . . . for deflecting illumination at an predetermined angle relative to the optic axis.

As to Claim 3, Applicant points out that the Hattersley reference is not properly cited as prior art, as it is not the invention "of another" and has the same inventive entity as the present application. Thus, obviousness rejections based on Hattersley should be withdrawn. In addition, Hattersley does not show or suggest the inventive subject matter

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introduced in Claim 3, as discussed below.

Claims 1 to 11, as now asserted, are directed to a hand-held, low power scanner that is adapted to reading bar code symbols and other visible indicia that are printed in phosphorescent ink on a non-phosphorescent background. The scanner is designed for reliable accurate reading of these phosphorescent symbols, and is intended to be user-safe, taking into account the fact that the device is emitting short wavelength black light illumination.

In the present invention, the scanner assembly includes a shroud or nosepiece that is shaped to concentrate the black light illumination on the target, and block any of the short-wavelength illumination from passing through the walls of the nosepiece. Claim 1 as now asserted specifically recites that the scanner incorporates a shield in the form of a hollow nosepiece having a open, wide proximal end fitting onto the distal face of said hand-held scanner device and a narrow distal end that is transparent to said black light, and a tapered shell that is opaque to said black light and that narrows in the direction towards the distal end, such that said black light illumination impinges on said symbol and the scanner device views the symbol as produced by said fluorescent markings. The nosepiece concentrates the black light towards the target, and ensures optimum reading of the target with minimum of illumination and at low power. This nosepiece, shaped generally as a truncated pyramid in the preferred embodiment, has a wide proximal end fitting the front face of the scanner and a narrow opening facing the target. This is illustrated by the embodiment of Figs. 4A to 4D. The shape of the nosepiece tends to concentrate the black light illumination to the small front window. The sides are opaque, at least to the black light illumination, so that the black light is not transmitted through the sides of the nosepiece.

Feng shows a reader with discharge tubes or flash tubes 414a, 414b. Filter

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elements 420a and 420b serve to filter out some of the UV, so that the emitted light falls in a narrow band of 300 to 400 nm. See Col. 14, lines 7 to 21. Feng's device has to strobe continuously, i.e., several times per second, with very high intensity illumination. Feng does not discuss any safety issues, and does not eliminate nor minimize the effects of stray UV illumination.

Pidhirny shows a scanner having a "transparent spacing element" in the form of a conic frustum, but with the distal end being much wider than the proximal end, i.e., having side walls that diverge out. Pidhirny does not suggest that light rays should be concentrated onto a target. Pidhirny's spacing element 20, 420 is not opaque for the wavelengths in question here, or for any particular band of wavelengths. Instead, Pidhirny's guide 20 is made of a transparent material so that is intended to transmit and conduct the illumination generated in the Pidhirny scanner. The wall of the guide 20 transmits the illumination from the LED light source (col. 6, lines 7 to 19).

There is no suggestion in Pidhirny that its scanner, which employs standard, visible or IR LEDs, should be adapted to employ UV LEDs or black light LEDs, and there is no suggestion that the drive circuitry should be modified to supply the correct voltage (3.7 volts or more for the black light LEDs, as versus 1.8 volts forward voltage for red or IR LEDs).

In Hattersley, the prism for deflecting the outgoing illumination is positioned off the axis, that is, offset from the line of view of the scanner. Hattersley does not suggest a transparent plate at the exit window that traverses the scanner optic axis, and that is tilted so that it does not reflect light directly back to the scanner's imager. Instead, in Hattersley, the light is carried around the optic axis in the prism, so the problem of illumination reflected off an exit window does not arise in that reference.

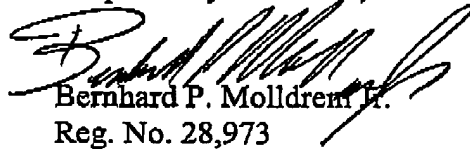
Applicants have also reviewed the additional patents references to Cyr et al.,

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Nimura et al., Laser, Doljack, Berson et al, and Kolesar, and Applicants agree with the Examiner's assessment that nothing in these additional references shows or suggests the subject matter of the Claims now being asserted in this application.

In view of the foregoing amendments and remarks, it is urged that all of Claims 1 to 11, as amended, are patentable, and early and favorable consideration is earnestly solicited.

Respectfully submitted,


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Enclosure: Drawing Corrected Fig. 2